

RTCA Special Committee 209

Working Group #1

Mode S Transponder MOPS Maintenance

Meeting #3

**Engility Corporation, Washington DC
2 – 4 October 2007**

Details of Suggested Change to Figure 2-19 in DO-181D

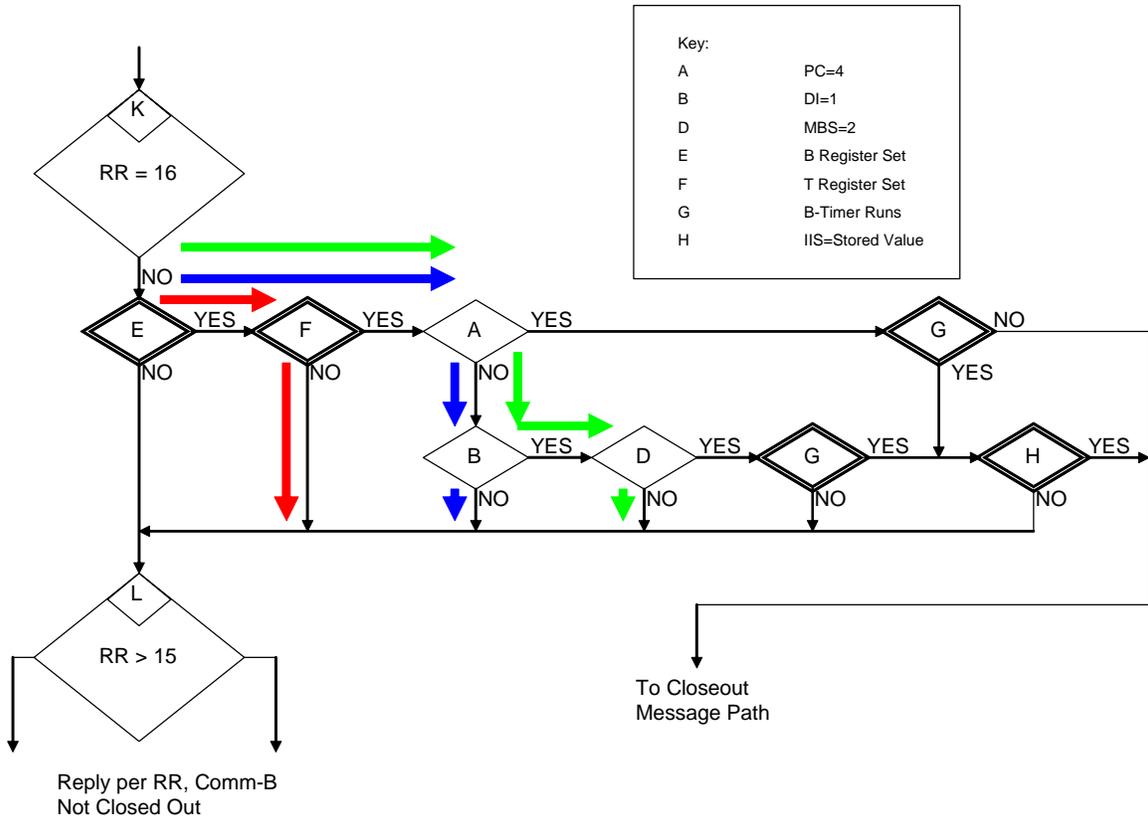
John Van Dongen, FAA Technical Center

SUMMARY

I have been reviewing and updating figures for DO-181 and of course this includes our favorite Figure 2-19. Recently I pointed out a problem with our latest change to this figure that you seemed to concur in your response pending further review. I have included detail here that identifies this problem and makes a case for adopting my original proposed correction (ModeS-WP01-06). I have tried to just make adjustments to the current figure to resolve this but there isn't a simple change that works. It is my position that my proposed change is efficient as possible and correct. The attached paper presents my case.

The following series of figures shows that the correction to Figure 2-19 originally proposed in ModeS-WP01-06 correctly processes all possible transponder states and interrogation patterns.

The section of the flowchart that is in question has two possible outcomes: to closeout a Comm-B message or not. The first figure shows that if basic conditions for closeout are not met, that closeout will not occur.



The **RED** path is taken if the Comm-B message was not transmitted at least 1 time.

The **BLUE** path is taken if the interrogation does not include closeout protocol (PC≠4, and DI≠1).

The **GREEN** path is taken if a multisite interrogation does not include closeout protocol (DI=1 but MBS≠2).

